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ABSTRACT

As part of a series of reports designed to support the implementation of Proposition 10: The California Children and Families Act and to provide comprehensive and authoritative information on critical issues concerning young children and families in California, this report examines how child health services can be improved to support two related goals of Proposition 10: (1) to improve the health and development all children; and (2) to ensure that children enter school ready to learn. The focus of the report is on opportunities to improve the content and quality of primary health care supervision by providing essential developmental services for infants and young children designed to promote their optimal development. The report reviews the recommendations for delivery of developmental, behavioral, and psychosocial services in current, widely implemented health supervision guidelines for children and examines the current research evidence supporting their effectiveness. The report also examines what is known about the extent to which these developmental services are currently provided and discusses related barriers to that provision. The report concludes with specific recommendations for expanding the provision of developmental services by health care providers, including strategies for improving service delivery in office settings, and suggestions for relevant system changes to integrate health care services with other services in the community. The report's two appendices include tables and figures for the report and describe best practice models. (Contains 38 references.) (KB)



UCLA Center for Healthier
Children, Families and
Communities

Building Community Systems for Young Children

Building Community Systems for Young Children is a series of reports designed to support the implementation of Proposition 10: The California Children and Families Act. Each installment is written by a team of experts and provides comprehensive and authoritative information on critical issues concerning young children and families in California.

December 2001

Developmental and Behavioral Health Services for Children: Opportunities and Challenges for Proposition 10

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Developmental and Behavioral Health Services for Children: Opportunities and Challenges for Proposition 10

I. Introduction

In this report, we examine how child health services can be improved in order to support two related goals of Proposition 10: to improve the health and development of all children, and to ensure that children enter school ready to learn. The definition of school-readiness that Proposition 10 has adopted suggests that children must be ready for school, that schools must be ready for children, and that family and community supports and services must contribute to children's readiness to learn (National Goals Panel, 1997). This definition is consistent with state-of-the-art knowledge in the fields of pediatrics and child development about the factors that contribute to optimal cognitive, socioemotional, physical, and language trajectories. In order to improve school-readiness, local and state Proposition 10 commissions will have to embark on a range of strategies to improve the developmental trajectories of all children.

A comprehensive strategy to advance the health of children for the purpose of improving school-readiness would include ways to ensure that all children are born healthy and wanted, and that all children have health insurance coverage and access to appropriate health care. Such a strategy would also include a range of outreach, education, and health promotion efforts that have been shown to improve health and developmental outcomes.

Until recently, many county Proposition 10 commissions have considered improving access to health care and health insurance to be the principal strategy to address the health needs of young children. While access to health care is certainly necessary, it is not sufficient to ensure that children receive the preventive and developmental services they need. Without an adequate health insurance benefit package, children will not receive the mental health, developmental, and dental services they need. Without appropriate content and quality of health care, many cognitive, speech, language, and other developmental problems and issues will go unidentified, parents will not receive important counseling to help them stimulate their children's learning capacities, and children's school readiness will be in jeopardy.

It is widely recognized that the health system is one of the principle gateways to promote child health and development. This system has potential to address the multifaceted nature of a young child's development as an integral part of ensuring child health. Health plans and pediatric practices are uniquely positioned to offer families high quality, comprehensive health promotion and developmental services that enhance the ability of families to nurture and rear healthy children who are ready to learn. Why is this so? First, the health system is the one system of care that virtually all families with young children have access to and use on multiple occasions during a child's first three years of life. Pediatric health care providers will almost surely remain the professionals who see families with young children most consistently and, as such, are ideally posed to provide developmental services in the context of an ongoing supportive relationship. Secondly, parents respect the authority and voice of the pediatric clinician. Recent national surveys of parents with

young children have found that mothers and fathers turn to their pediatrician, in addition to each other or their mother, when they want information on parenting and child development. And parents report that if pediatricians or nurses discuss certain topics with them, they are more likely to respond by, for example, breastfeeding longer or reading to their children more frequently (Halfon, McLearn and Schuster, 2002).

If the health care system is going to be an essential player in Proposition 10's overall strategy to promote school-readiness, the content and quality of health services that specifically address child behavior and development must improve. The health care system has the potential to meet and surpass the basic goal of ensuring access to care, but health care providers can do more than attend to children's physical health – they can provide effective services to support or enhance children's cognitive, emotional, and social development.

The focus of this report is on opportunities to improve the content and quality of primary health care supervision by providing essential developmental services for infants and young children that are designed to promote their optimal development. While this paper addresses developmental, behavioral and psychosocial services in primary care, we refer to these collectively as developmental services. In this report, we review the recommendations for delivery of developmental, behavioral and psychosocial services in current, widely implemented health supervision guidelines for children and examine the current research evidence that supports their effectiveness. We also examine what is known about the extent to which these developmental services are currently provided and discuss related barriers to their provision. The paper concludes with specific recommendations to expand the provision of developmental services by health care providers, including strategies for improving service delivery in office settings, and suggestions for relevant system changes to integrate health care services with other services in the community.

II. Background and Significance

Several reasons exist for expanding the goals and objectives of health supervision in relation to children's development. Most important is a greater appreciation for the importance of early childhood experiences on later development. Specifically, the research on neural plasticity tells us that the developing brain is capable of being modified by both deleterious and beneficial experiences that can have lasting effects on the child (Nelson, 2001; Shonkoff and Phillips, 2000). During the first 5 years of life, windows of opportunity exist for interventions to optimize children's development so that they arrive at school ready to learn. This can be achieved by the following:

- Promoting developmental capacity through optimal experiences and environments.
- Identifying and eliminating threats to optimal development.
- Modifying deviations in normal developmental trajectories.
- Addressing active disabilities through appropriate interventions.

Over the past two decades, our ability to optimize healthy development through the health service system has grown. Evidence suggests that services promoting the optimal development of children have the potential to be effective in changing developmental trajectories. Primary care health providers for children are strategically positioned to play an important role in the promotion of children's neurological and psychological health. Although the potential to optimize children's health beyond the traditional concept of physical health exists, many opportunities to provide beneficial services to children are missed.

III. The Concept of Health Development

Traditional goals of child health supervision have been based upon a concept of health "maintenance" that includes the management of acute and chronic diseases and a limited set of disease prevention and health promotion practices. However, health during childhood is a dynamic process of developmental change that is a major influence upon children's physical and mental health and their later social function and productivity. Therefore, we contend that health provision is better conceptualized by a model that emphasizes the importance of developmental change and developmental trajectories (Halfon, Inkelas and Hochstein, 2000).

The incorporation of services to address concerns related to children's development has grown over the past several decades with a paradigm shift in primary care to incorporate what have been termed the "new morbidities" as key health supervision priorities. "New morbidities" refers to the increasing prevalence of developmental, behavioral, and learning concerns and problems faced by children and their families over the last several decades that pose real threats to a child's or adolescent's healthy development (Haggerty, 1975). Health supervision guidelines over the years have consistently included a growing list of developmental services to be delivered in routine care in response to the new morbidities (AAP, 1997; Green and Palfrey, 2000). These additional developmental services include eliciting and addressing parents' concerns about child development and behavior as well as the psychosocial concerns of the family and problems in family relationships, and providing problem specific developmental interventions beyond the traditional developmental screening exam.

IV. Developmental Surveillance and Developmental Services

As the approach to developmental and behavioral problems has changed, the process of primary health care delivery for children has been reconceptualized. For example, while past and present guidelines recommend that all children receive a developmental assessment at each visit, the performance and efficacy of such approaches have been questioned. Addressing the limitations of developmental screening approaches, Dworkin suggests a more comprehensive model for monitoring the development of children by health care providers, termed *developmental surveillance* (Dworkin, 1989). Developmental surveillance refers to a "flexible, longitudinal, continuous process of activities that include eliciting and attending to parents' concerns, obtaining a relevant developmental history, making accurate and informative observations of children, and sharing opinions and concerns with other relevant professionals, such as child care providers, visiting nurses,

and preschool teachers." Rather than viewing development in isolation during a screening session, emphasis is placed on monitoring development within the context of the child's overall well-being (Dworkin, 1992). In 2001, the American Academy of Pediatrics' Committee on Children with Disabilities published a policy statement recognizing developmental surveillance as an important strategy for health supervision (see Table 1 in Appendix A).

Developmental surveillance activities have been elaborated in detail for each health visit in *Health Supervision Guidelines* published by the American Academy of Pediatrics (AAP, 1997) and the Maternal and Child Health *Bright Futures* project (Green and Palfrey, 2000). We conceptualized these activities as developmental services defined by a typology with four major categories (see Table 2 in Appendix A) (Regalado and Halfon, 2002). *Assessment* services include evaluation of information from parents, developmental monitoring (including screening for developmental problems *when indicated*), psychosocial assessment, parent-child observation, and assessments of child behavior. *Education* services include anticipatory guidance addressing the parent-infant relationship, child behavior, and various developmental challenges (e.g., promoting healthy sleep habits, discipline practices), and parenting education in different formats. *Intervention* services include various types of problem-focused counseling in the office setting, such as a telephone service or through home visitation. *Care coordination* refers to the management of service needs, e.g., referrals for diagnostic assessments or other specialists for care. These developmental services define the *content* of "developmental" health supervision for children.

V. Effectiveness of Developmental Services

The clinical efficacy or effectiveness of primary care activities addressing child development is supported by a limited, but important, evidence base summarized in a recent review of the literature (Regalado and Halfon, 2001). The major findings of the review, focusing on services provided during the first 3 years of life, are summarized below. Additional evidence is cited for the preschool period (but the literature from this developmental period was not systematically reviewed). Our purpose is to briefly review the evidence base, available tools, and delivery approaches of proven benefit that can readily be incorporated into quality improvement strategies.

What Is Known About the Effectiveness of Assessment Activities

Assessment provides an important database for clinical care. Much of the focus in the past has been the assessment for risk of developmental disability through a process of developmental screening. This is partly in response to parents' expectations that the health visit provide reassurance of their child's developmental progress, and more recently, to the expansion of the Individuals with Disabilities Education Act (IDEA) that provides early intervention services to children at risk for developmental disabilities. Other types of assessment have been developed and evaluated for the office setting in recognition of the complexity of the developmental process and the importance of understanding the child's behavior and psychosocial environment. These include reliable assessments of parents' concerns, parent-child interaction, quality of the home environment, and psychosocial risk factors for parenting. While many tools have been developed, tested, and shown to

be effective in eliciting concerns and identifying problems in practice, most child health providers routinely use more informal methods of assessing developmental, behavioral, and psychosocial needs (Halfon et al., 2000).

Approaches to eliciting and assessing parents' concerns about development and behavior not only encourage their discussion at the health visit (typically, these concerns are discussed only one-third of the time), but are also helpful in identifying children with undiagnosed developmental problems. That is, the nature and number of parents' concerns are associated with different probabilities of having true developmental problems (Glascoe, 1999). The utility and accuracy of a relatively new tool, the Parents' Evaluation of Developmental Status (PEDS), a validated approach to eliciting and evaluating parents' concerns about behavior and development, are comparable to those of longer and more costly developmental screening assessments (Glascoe, 1997). This innovative and easy-to-use clinical approach is currently being incorporated into primary care procedures in many sites throughout the U.S., Australia, and the U.K. Another approach that seeks to identify children who may have developmental problems is the Simultaneous Technique for Acuity and Readiness Testing (START) procedure. Developed by pediatricians at Johns Hopkins University, this procedure uses observations of preschool child behavior in the office to screen for both developmental and visual acuity problems (Sturner, 1991). It has been demonstrated to be both efficient and accurate in identifying children at risk for developmental problems.

Other assessments have been developed to identify problems in the psychosocial environment. Maternal depression, exposure to domestic violence, substance-abuse problems, housing instability, and histories of child abuse are risk factors for various parenting problems and are associated with adverse child development, behavior, and psychological outcomes. Given the sensitive nature of the topics, the identification of these psychosocial risk factors can be challenging. Questionnaires developed to identify parents with these psychosocial risk factors appear more effective than physicians' clinical appraisals (Kemper, 1992; Wissow et al., 1992). Other approaches to assessment of the psychosocial context have addressed the quality of the home environment to nurture developmental progress (Frankenburg and Coons, 1986; Casey et al., 1988) and the quality of social interaction between parent and child (Casey et al., 1993).

There are several assessment tools for child behavior problems available for clinical use. The Child Behavior Checklist (Achenbach, 1992) has been adapted to examine behavior problems in children from 1 to 5 years of age, and the Eyberg Scales (Eyberg and Ross, 1978) for children ages 2 to 11 years, although neither has been evaluated in the pediatric office context. On the other hand, the Pediatric Symptom Checklist (Jellinek et al., 1999) has been extended for office use with preschool children and provides a useful tool to stimulate discussion between the health provider and parent about their concerns regarding a child's behavioral and socioemotional development. Assessments of behavior that seek to characterize an important component of social-emotional development – child's temperament – have been evaluated in the context of anticipatory guidance (see below).

To summarize, several types of structured and validated assessment tools exist to assist health care providers in determining the developmental needs of children and their families. However, these tools are seldom used in routine care, where "informal" and less reliable assessment techniques are the norm. Because informal approaches are inaccurate and subject to bias, this represents an area of clinical care where there is potential for improvement by incorporating validated assessments into a routine surveillance strategy. Given that pediatric clinicians are trained in doing assessment, recommending necessary treatments, and positioned to routinely assessing children as they pass through the pediatric health system, there are built-in and yet unrealized opportunities to assess a child's development, address parental concerns and systems to make appropriate referrals to community services.

Developmental Education

The health visit provides an important opportunity for primary preventive counseling around developmentally important child-rearing topics, including social interaction with infants, temperament, healthy sleep habits, ways to promote children's learning, and the use of discipline. For example, child health providers who model reading behavior and provide books to their patients have been shown to increase the frequency and amount of reading behaviors that parents engage in with their children (High et al., 1998). Studies have documented that effective teaching by a physician can assist parents in expressing warmth in their social interactions and promote parental adaptation to the child's individual behavioral style (High et al., 1998). Pediatric book distribution programs are effective ways to increase book-sharing activities and promote children's learning. In addition to discussions about reading and temperament, pediatricians can counsel about infant sleep behavior to reduce night waking problems. To help parents work with their children's behavior problems, providing written anticipatory guidance to promote the use of "time-out" is sometimes effective.

As is the case with developmental assessments, effective and productive teaching approaches are not routinely used in clinical practice (Chamberlin et al., 1979). Instead of tailoring discussions of development, behavior, and education to the particular needs of a family, providers routinely discuss topics concerning general development, a didactic technique documented to not be very effective (Dworkin et al., 1987). Here again is an opportunity where improvement strategies stand to make significant gains.

Intervention

Physicians that can make themselves available to address parents' developmental, behavioral, or psychological concerns about their children are routinely consulted about their recommendations regarding the management of common developmental, behavioral, and psychosocial problems. The Regalado and Halfon literature review focused narrowly on counseling interventions for excessive infant crying and sleep disturbances, both very common clinical concerns during the first 5 years. In both cases, effective counseling techniques can help to provide strategies to calm fussy babies or to manage night waking and bedtime settling difficulties, and improve child and family relationships, building a parental sense of confidence in their child-rearing skills. Though pediatricians encounter many other behavior concerns (biting, temper tantrums, toilet training refusal, and hyperactive

behavior), unfortunately the current literature is very limited regarding the effectiveness of pediatric recommendations or management in these areas.

Care Coordination

A fourth category of developmental activities addresses the need to coordinate and monitor the ongoing care of children and to connect children and families to appropriate developmental, behavioral, and psychosocial services in their community. In the current situation, many conflicts arise, particularly with regard to service obligations (e.g., who should do diagnostic developmental testing), time and labor costs, and boundary issues with other behavioral subspecialties (e.g., between general pediatrics, social services, developmental-behavioral pediatrics, psychology, and psychiatry). Currently, when a referral is made to an intervention program, diagnostic service, or other specialist, numerous access barriers can exist that are seldom trivial.

As we have noted previously, child health services addressing child development are closely tied to the availability of supportive community services. Health service pathways to guide evaluation and management of developmental and behavior problems as well as referral criteria to other subspecialists are similarly needed. Such service delivery pathways have been effectively developed for other health conditions. As we discuss below, several communities across the U.S. have developed new pathways and procedures to improve access, coordination, and integration of early health and developmental services for children. The potential to implement effective, innovative methods of linking the child's health care home to other developmental services in the community should also become a focus of quality improvement efforts.

VI. The Quality of Developmental Services

Quality measurement and the generation of health-plan score cards on the quality of services provided have become common and accepted components of the health care marketplace in both the public and private sectors. Although developmental services are a significant component of preventive care, few quality measures are available to assess how well the health care system provides this important set of services. Currently, commonly used measures of the quality of pediatric health supervision like Health Employer Data Information System (HEDIS) focus only on the number of well-child care visits and receipt of immunizations, and do not explicitly measure the content of care or the quality of developmental services provided. Until recently, there were few measures that could be employed to measure quality and guide the quality improvement of developmental services.

Recently, Bethell et al. published an extensive description of one methodology using the already developed Promoting Healthy Development (PHD) Survey (Bethell, Peck and Schor, 2001). Created by the Foundation for Accountability, a national organization that focuses on assessing consumers' experiences with health care, this 36-item parent survey examines whether health care providers talk with parents about recommended topics, provide follow-up for children who may be at risk for developmental problems, and address psychosocial well-being and safety within the family. This

new tool provides the first comprehensive examination of the quality of developmental services in well-child care visits. Extensive testing of the PHD survey in several managed care organizations in different states, and with a large population of Medicaid enrolled children, suggests that the quality of developmental services in these settings is poor (Bethell, Peck, Read and Huang, 2001). Half of the parents surveyed reported having one or more concerns about their child's behavior or development that were addressed insufficiently by their child's health provider. Parents routinely rated the anticipatory guidance they received lower than did parents who expressed no concerns about their children's behavior or development. On the other hand, when parents report receiving information and guidance from their health care providers, they also report increased confidence in their parenting skills.

The potential to utilize instruments like the PHD survey for quality measurement, accountability, and quality improvement is just being recognized. The states of Washington, Maine, North Carolina, and Vermont have all recently used the PHD survey as part of systematic efforts to improve the quality of developmental services provided by their state-funded Medicaid programs (Rosenbaum et al., 2001).

The potential of this and other newly implemented quality measurement tools that specifically measure the quality of health and developmental services that children receive represents a real opportunity to introduce greater accountability, support changes in practice and physician behavior, and create incentives for change.

VII. Provision of Developmental Services

Although limited, current information suggests that the delivery of developmental services by child health providers suffers from significant inadequacies. A 1999 national survey of 118 "exemplary" pediatric practices suggests that the delivery of developmental services is inconsistent (Halfon et al., in progress). Most practices reported following available guidelines for health supervision; however, unreliable and inaccurate "clinical judgment" was the norm for assessments, and the use of validated tools was uncommon. A recent survey of pediatricians conducted by the AAP and UCLA (Halfon et al., 2000) determined that most (80% of pediatricians) reported lacking confidence in advising parents who have developmental concerns, and a third reported inadequate training in this area. Moreover, only one-third reported having sufficient time for developmental assessment during a routine health visit (AAP Fellows Survey, 2000). Finally, a 1996 national survey of parents of young children revealed that 50-75% had not received anticipatory guidance about common developmental topics such as newborn care, soothing fussy babies, helping infants sleep, toilet training, discipline, and helping children learn (Schuster et al., 2000).

VIII. Barriers to the Provision of Developmental Services

In order to improve the provision of developmental services, it is important to recognize barriers and identify strategies for their removal. From the foregoing discussion, it is clear that there are numerous barriers to the provision of developmental services. These barriers can be classified as either *internal* or *external* to the office. First it must be recognized that when compared to the

developmental services potentially available in the wider community, the scope and depth of developmental services in any pediatric office are quite limited. Therefore, in order for child health providers to take advantage of their strategic position to identify, prevent, and treat developmental, behavioral, and psychological problems, and fulfill their mission as a health care home, they must consider how to link with diagnostic, educational, intervention, and other supportive services in the community (see Figure 1 in Appendix A).

The strategic importance of connecting pediatric health providers to community-based developmental services is illustrated in Figure 1 and bears further emphasis. The scope of developmental services that any given child health practice routinely provides is partially determined by the availability of such services in the community and its level of connectivity to them. Several examples will illustrate this point. If a community does not have services for mothers who are depressed, then pediatric providers are unlikely to screen for this common and treatable condition because they have no place to refer treatment. If community programs routinely provide developmental screening for high-risk infants, then this service might be referred out of the provider's office. Similarly, if no program exists for the treatment of significant behavior problems in preschool children, then the pediatric office has the option of offering this service with appropriately trained personnel (e.g., Licensed Clinical Social Worker (LCSW), Marriage, Family and Child Counselor (MFCC), or psychologist) or not assessing for these problems at all. In each community, the challenges and opportunities to overcome barriers and improve levels of connectivity will be different.

Internal barriers are those specific to the pediatric health care setting. These include inadequate time during the office visit, inadequate training of physicians, and ineffective administrative and clinical practices. As noted earlier, physicians in national surveys report having a very limited amount of time in which to address developmental services. The average office visit lasts about 18 minutes. With other competing priorities (physical health screening and education), this leaves little time to address developmental and behavioral concerns. Compounding this problem is inadequate training of physicians. Physicians receive 1-2 months' exposure to child development in their residency training, which is inadequate to acquire the basic knowledge and clinical skill to provide individualized developmental care to families. Physicians also spend their entire training experience perfecting skills based upon a medical disease model that is inappropriate for most developmental and behavioral concerns, which are not diseases and which exhibit a wide range of normative variation. Finally, physicians receive little clinical training in effective communication techniques that are crucial to helping parents make adjustments around developmental issues. These are all deficits that can be remedied.

The lack of an efficient and effective office practice strategy to operationalize surveillance procedures is also a barrier. For example, until recently, a mass population approach, using screening tests to detect developmental problems, was the recommended norm for developmental assessment and a major focus of developmental care. This approach has been criticized for many reasons, including its narrow focus (which neglects parents' concerns and the psychosocial context) and inevitable problems with efficiency (low accuracy of most screening tests, time costs, etc.). Nonetheless, many practicing pediatricians and training programs continue to practice and teach this

traditional and largely ineffective and inefficient approach. Although many other clinical tools and approaches have been shown to be effective, appropriate developmental surveillance ultimately requires a clinical expertise in child development and a system of clinical routines that facilitate effective delivery of these services. In summary, the current medical educational system, which is heavily loaded with inpatient care responsibilities, does not help in preparing clinicians with the knowledge and skills that they need. Moreover, routine practice patterns for addressing the developmental needs of children and their families in community systems require reengineering at the practice and community levels.

Team Approach to Developmental Services

The best way of helping children is to help their parents and the best way to reaching parents is through their children (Zuckerman and Parker, 1995). The relationship between parental and child health has received inadequate attention in the past. New research findings show a clear link between a mother's use of health services for herself and her use of services for the child as well as between selective aspects of parental and children's health (Zuckerman and Parker, 2002). These findings suggest the need for a two generation approach to child health services that uses the pediatric visit to identify parental health problems that are known to affect child health and development. Child health services need to provide parents with counseling about their own health behaviors and address parental health and behavioral issues such as depression, domestic violence and household smoking and additions that are known to adversely affect child health and well-being.

Mental health problems, especially depression among mothers occurs commonly and has well documented adverse affects on children's health, including increased risk behavior problems, poor growth, accidents and affective disorders (Lyons-Ruth et al. 2002). Drug addiction, alcoholism and smoking are common parental addictions that put a child in non-optimal environments and jeopardize the child's developmental trajectory and ultimately, readiness to learn. These broader health care goals go beyond the expertise of most health care practices and require adaptations to meet them.

Several recent reports including the influential Institute of Medicine's *Crossing the Quality Chasm: A New Health System for the 21st Century*, have highlighted the value of physicians working in teams with non-physician professionals to more effectively deliver care (IOM, 2001). Healthy Steps and other modes of clinical teaming demonstrate the value of a nurse or social worker within an office who can cross walk the various systems, do developmental assessments, take a two generation approach, make community referrals, and provide enhanced developmental education, anticipatory guidance and counseling. The American Academy of Pediatrics Future of Pediatric Education II report states that pediatricians will need to work more in teams in order to improve quality of care. Enhancing the functioning of pediatric offices could also help to strengthen the links and connections between the health care system and child care system.

External barriers are those that impose themselves from outside the office and inhibit the ability of the pediatric office to connect with available community services, or are macrosystem barriers that are imposed on the office by inadequate reimbursement, insufficient administrative support, and the lack of other enabling factors that are essential for the optimum delivery of health and human

services.

Because the pediatric health care office was developed as a self-contained unit primarily focused on the diagnosis and treatment of medical conditions, the need for and development of connections between the office and the service community have not been fully manifest. Many of the new morbidities that affect a child's development and behavior, such as maternal depression, family violence, or parental drug abuse, are issues that pediatric providers are ill-equipped to address. Even if they are skilled in assessing these problems, they have difficulty in making the connection to the appropriate service delivery entity in the community. Moreover, for a whole range of developmental and behavioral problems in children, diagnostic and treatment services are provided by different systems that can be administered and funded entirely separately through schools and public mental health systems. Therefore, the ability to connect to these systems becomes a determining factor for whether pediatricians will undertake the delivery of the service. Throughout the country, there are examples of communities that have attempted to overcome barriers associated with a lack of referral sources and connectivity to community resources by developing comprehensive, communitywide case management and coordination systems.

Another potential barrier to providing developmental services is the fact that the importance providing developmental services is often not recognized. Current accountability systems that utilize quality measurement tools, such as the Consumer Assessment of Health Plans Survey (CAHPS) and the HEDIS measurement system, do not measure the content and quality of developmental services or whether a developmental assessment was provided to a child. Again, this problem is potentially remediable by utilizing available quality assessment and measurement instruments, and incorporating new measures into existing instrument sets so that the provision of developmental services is included as part of these important and emerging accountability mechanisms (George Washington University, 2000).

Finally, the lack of adequate reimbursement under existing managed care and capitation contracts, as well as a lack of familiarity with the appropriate billing codes that can be used in those health care systems that permit billing for specific services present significant external barriers for providing developmental behavioral services. Again, these are not immutable barriers since several states have implemented more appropriate reimbursement mechanisms and many individual practice and practice organizations have developed and trained providers in utilizing appropriate billing codes to optimize reimbursement.

IX. Summary of Research Findings

- The provision of developmental services in the pediatric health care setting is inadequate to meet the needs of most families.
- The research literature is limited but compelling in suggesting that a specific array of developmental services is potentially effective when appropriately delivered in health care settings.
 - Effective assessment tools exist to aid the health practitioner in providing developmental surveillance.
 - Effective physician teaching about clinical topics must address ways to optimize the parent-child social relationship by emphasizing emotionally and cognitively stimulating social interaction, and an understanding of the child's individuality that enables a "good fit" with child-rearing approaches.
 - Primary care counseling interventions for common behavioral concerns such as sleep habits and infant fussiness appear to be effective in this setting.
 - Care coordination strategies have not been empirically evaluated. Because effective developmental services require a successful link between the health care office and the community, this represents a critical component of a communitywide system strategy for providing comprehensive care and requires focused attention.
- Barriers to effective delivery of developmental services include time limitations, inadequate financial support and reimbursement, inadequate training of physicians, and lack of a linkage between the health office and other community providers.
- There are a number of new tools, clinical strategies, techniques, and office management procedures that could be helpful in improving the content and quality of routinely provided developmental services.

X. Recommendations

Improving the delivery of developmental services in health care settings must address both the strengths and weaknesses of the current system. Potentially effective services have been identified and evaluated as noted above. Many physicians lack adequate training to conduct these activities and have competing priorities such as time and financial pressures that act as barriers. The time is right to begin to reconceptualize how the needs of young children and their families may be better met despite the training, financial, and time constraints. There is both the challenge and opportunity to creatively reconfigure pediatric care to better meet parents and the community's desire to have all

children ready to learn as they enter school. This will require physicians to work in expanded roles with each other, non-physician specialists such as nurses, social workers and community-based early childhood and family support specialists. These new models of practice could be a boon to children's health and development. They could also improve the quality and efficiency of pediatric care. Therefore, building an effective early childhood community services and health care system would strengthen the current foundation by specifying and supporting those activities most appropriate for delivery at the health visit while establishing linkages with supportive services and providers in the community. We offer the following recommendations to Proposition 10 commissioners:

1. Develop a communitywide system.

To be effective in addressing the developmental needs of children, pediatric health care must be fully integrated into a larger communitywide system of developmental care - not only because of its strategic position in the service system, but also because of its limitations in this area as noted above. In a communitywide system of developmental service, roles, responsibilities, linkages, and boundaries for each aspect of the provider system should be specifically defined. For example, the goal of identifying developmental problems should explicitly define the role of the health care provider and other related services (e.g., WIC, childcare, family resource centers) in eliciting concerns about developmental problems, performing an appropriate assessment of those concerns, identifying criteria for performing confirmatory screening tests, and referring the child for diagnostic testing. The system should also have an efficient service-coordination component and established tracking/monitoring procedures and there should be clarification on the pathways taken by children with specific service needs.

Steps should be taken to extend developmental and psychosocial surveillance to WIC, preschools, and childcare sites as these providers have early and frequent contact with children and families. This information could be transmitted to child health providers or be used in making direct referrals to appropriate diagnostic, preventive, and treatment services.

A process should be developed to address the needs of children who would benefit from developmental services but who do not meet criteria for developmental disabilities that would be served by Regional Center programs or special education. Many children who fail developmental screening tests do not qualify as disabled but still have needs for parenting programs, social services, or supplemental educational assistance. Glascoe (2001) has documented that this group of children ("over-referrals" or "false positives") perform lower on tests of intelligence and achievement compared to children who pass screening assessments and tend to have more psychosocial problems and concerns. These are children who would benefit from additional learning experiences that could be provided at home or preschool (Head Start, Title I programs, tutoring, etc.) to maximize their potential for learning later in school. Many would also benefit from a variety of psychosocial services. One solution to this gap in the service system is the creation of a developmental services assessment and management center. Such a center could serve as a regional hub for pediatric practices and child care providers, and could be linked directly into an IDEA and Regional Center system. Figure 3 in Appendix A outlines the process from surveillance to referral and care

coordination in a model community system of comprehensive developmental care. A similar model has been created in Denver (see Appendix B).

2. Develop and implement a health care practice model.

To integrate services across the community, it is important to have a more specified and defined set of components and processes within the pediatric office. This model would serve to assure that the components necessary to provide developmental services are in place at the practice level and systemwide. Figure 2 in Appendix A provides an example of a child health care model and subcomponents that need to be in place, including clinical decision support and care coordination systems.

- Use the existing evidence base to develop office-based strategies for providing comprehensive, individualized care. The National Initiative for Child Health Quality (NICHQ) is currently using a child health care-model and evidence from the literature to fashion a set of tools and procedures to help practices reorganize how they provide these services (see Appendix B for a detailed explanation). For example, use structured, validated assessment tools to:
 - Identify specific parental concerns
 - Evaluate risk for developmental problems
 - Define the strengths and needs of the psychosocial environment
 - Identify priority areas for anticipatory guidance and education
 - Manage problems
 - Coordinate care
- Fund team-based approaches to pediatric health care. The best model for this approach to care is the Healthy Steps Program (see Appendix B). This model takes a two-generation approach to care and capitalizes on the skills of a specialist trained in child development to supplement the medical skills of the physician.
- Evaluate the effectiveness of assessment, educational, intervention, and care coordination services. As Regalado and Halfon (2001) point out, most of the existing research literature examining developmental services are studies of efficacy. The leap from the laboratory to the community is long and frequently unsuccessful. Proposition 10 funds should be used to develop the methods for documenting the effectiveness of these services and for making the appropriate adaptations from lessons learned.
- Develop strategies for individualizing care. There is no validated strategy for helping pediatricians individualize care to meet the specific needs of each family at the health visit. Some parents may have needs for new information only, others may need specific discussion about a developmental challenge, while still others may need out-of-office referrals to parenting programs or to mental health specialists. A systematic strategy for identifying and prioritizing the individual needs of parents is critical to the success of any developmental services program. The literature is quite clear that universal prescriptions as parenting or developmental advice is

ineffective (Regalado and Halfon, 2001).

3. Integrate services.

Mechanisms should be identified for organizing and integrating the service system using the entire spectrum of community providers in collaboration with the health care provider's office as the health care home. The health care home model identifies the health care office as an ongoing, regular place for comprehensive health care that includes developmental, behavioral and psychosocial issues, where the child has an ongoing relationship with a primary provider and where all the child's health and developmental needs can be assessed and appropriate referrals made for additional care. The health care home also serves as a hub to connect the child and family to other necessary services in their community.

Partnering with the schools through local education agencies (LEAs) is a way for health care homes to extend their reach. All LEAs in California that receive federal funds under the Elementary and Secondary Education Act are required to have Local Improvement Plans. These are planning documents developed in partnerships with schools, parents, families, and communities to administer comprehensive, coordinated integration of federal, state, and local programs to improve the academic achievement and well-being of children. These plans could foster a closer collaboration between school systems, health care providers, Regional Centers, and early intervention programs to enable delivery of developmental services on a communitywide basis.

4. Support the creation of new approaches based on other promising models.

There are several examples of innovative programs and "best practices" that provide direction for systems change. These include:

- Innovative programs to redesign the provision of pediatric care, such as Healthy Steps for Young Children (see Appendix B).
- Innovative ways for linking community-based resources focused on improving development and preventing adverse outcomes, such as ChildServ in Connecticut (see Appendix B).
- Innovative reimbursement strategies to link various services and public reimbursement strategies, such as the Denver system model (see Appendix B).
- Innovative practices at the state level to improve accountability for the provision of developmental services and encourage communitywide quality improvement efforts such as what Washington, Maine, North Carolina, and Vermont are currently pursuing.

5. Improve physician training and create a Center of Excellence for training and program development.

There is an important need to improve physician training, particularly in doctor-patient communication and clinical child development, to engender a proactive attitude toward child

development concerns, to enhance communication with parents around child development concerns, and to develop effective surveillance skills.

Proposition 10 commissions could work with California-based family practice and pediatric residency training programs to stimulate a greater focus on child development training. The development of clinical teaching modules, the utilization of innovative training programs like Healthy Steps at academic medical centers, and other training strategies would ensure that the provider pipeline was transformed.

Academic medical centers with clinical training programs should be transformed into Centers of Excellence for training in developmental services, for linking community-based providers with specialized developmental services, and for promoting innovations in developmental care. The academic medical center represents an existing resource that has functioned in other domains (e.g. cancer care, children with special health care needs) to provide special training, services and connectivity to community-based providers. A marginal investment in infrastructure development could allow these institutions to play long term roles in workforce development and quality improvement.

Education linked to quality improvement strategies should be promoted for child health providers in practice. This would go beyond routine continuing medical education (CME), and would utilize practice reengineering techniques that have been demonstrated to be effective in other clinical areas, such as the approach that the National Initiative for Children's Healthcare Quality (NICHQ) is spearheading. These efforts could also be linked to academic training programs.

6. Improve statewide coverage and reimbursement policies.

Including language in Medicaid and Healthy Families managed care contracts to ensure the provision of developmental services for children birth to age 5 would make child development services a covered benefit. In order for medical plans serving children birth to age 5 (e.g., Medi-Cal, Healthy Families, insurance plans) to provide child development services, contracting managed care organizations (MCOs) must include language in their contracts that specify the desired services. According to a recent report from the George Washington University Center for Health Services Research and Policy (2000), the package of contracted services should include services in four main elements: screening and assessment, developmental health promotion, general developmental interventions, and care coordination (including referrals to appropriate child service agencies). The George Washington Center has created model contract language to facilitate the adoption of such provisions.

Children under 3 years of age are entitled to Child Health Disability Prevention Program (CHDP) services as per the federal Early Periodic Diagnostic Screening and Treatment Program (EPDST) regulations. If a service such as developmental services falls into a statutory or regulatory Medicaid benefit category (such as EPSDT services or physician services), and if this service category is covered under a state's Medicaid Plan, federal matching funds are available for that item or service in that state. Thus, if framed correctly, child development services can be provided and matching funds obtained for such services.

With the current State Children's Health Insurance Program (SCHIP) system, large amounts of unused money are sent back to the federal government. Instead, this excess money can be used to reimburse health care providers for providing developmental services either by increasing capitation rates for developmental services, or by directly reimbursing the practitioner for services provided.

7. Improve quality measurement and accountability by developing a system for quality assurance.

Quality measurement tools that the California Department of Health Services currently uses, like HEDIS, should be modified to include measurements of developmental services that address the content and quality of development services. This type of administrative change in the accountability that state funded programs demand would create a powerful incentive for practice change within managed care organizations and physician practices.

Healthy Families and Medicaid should consider launching practice improvement initiatives, focused on the provision of developmental services, as has been done in Maine, Washington, Vermont, North Carolina, and other states. In these states, the Foundation for Accountability (FACCT) Promoting Healthy Development consumer survey is being used to assess quality of services and target improvement efforts.

8. Map, track and evaluate promising approaches.

In order to stimulate quality improvement, innovations, and systems change, it will be important to monitor changes and improvement in the delivery of developmental services and to continue to expand the scientific evidence for what works. One of the best and most efficient ways of promoting innovation at the practice level is by supporting practice-based research and quality improvement networks focused on improving the quality of developmental services and the performance and connectivity of the health care home.

XI. Conclusion

Provision of quality health care is an important component of an integrated early childhood service system whose goal is to promote optimal child development. Unfortunately, at present, there are missed opportunities for the provision of appropriate developmental services in health care settings, so that many developmental needs and problems go unrecognized. If the potential of the health care system to promote optimal development in children is to be realized, significant consideration must be given to its organization and performance of developmental services. This includes paying attention to the provision of and reimbursement for appropriate services, as well as engaging in efforts to ensure that child health providers can effectively and efficiently use the growing communitywide service system that Proposition 10 is building. In order to help health care practices provide better developmental services, we must address and overcome the barriers at the provider, practice, health plan, and community level. This will require a multilevel, integrated strategy that simultaneously addresses coverage, reimbursement, education, tool development, quality monitoring, and quality improvement issues. Proposition 10 commissions are positioned to address current deficiencies and to put mechanisms in place that could enhance the provision of developmental services in the various health care settings noted above. This represents a significant leap beyond the current focus of increasing access to health care for all children. By adopting a strategic approach, Proposition 10 commissioners can increase the potential for health care providers to deliver more effective developmental services, create and provide access to a larger, communitywide system of developmental services, and improve the coordination of the developmental care for all children.

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XIII. Appendix A: Tables and Figures

**Table 1: AAP Committee on Children with Disabilities
Recommendations for Developmental Surveillance and Screening of
Infants and Young Children**

- Maintain and update knowledge about developmental issues, risk factors, screening techniques, and community resources, such as early intervention, school, Title V, and other community-based programs, for consultation, referral, and intervention.
- Acquire skills in the administration and interpretation of reliable and valid developmental screening techniques appropriate for the population.
- Develop a strategy to provide periodic screening in the context of office-based primary care, including the following:
 - Recognizing abnormal appearance and function during health care maintenance examinations;
 - Recognizing medical, genetic, and environmental risk factors while taking routine medical, family, and social histories;
 - Listening carefully to parental concerns and observations about the child's development during all encounters;
 - Recognizing troubled parent-child interaction by reviewing history or by observation;
 - Performing periodic screenings of all infants and young children during preventive care visits; and
 - Recognizing the importance that test procedures and processes be culturally sensitive and appropriate to the population.
- Present the results of the screening to the family using a culturally sensitive, family-centered approach.
- With parental agreement, refer children with developmental delays in a timely fashion to the appropriate early intervention and early childhood education programs and other community-based programs serving infants and young children.
- Determine the cause of delays or refer to appropriate consultant for determination. Screen hearing and vision to rule out sensory impairments.
- Maintain links with community-based resources, such as early intervention, school, and other community-based programs, and coordinate care with them.
- Increase parents' awareness of developmental disabilities and resources for intervention by such methods as display and distribution of educational materials in the office.
- Be available to families to interpret consultants' findings.

Table 2: Typology for Developmental Services

- *Assessment* – evaluation of information from parents, developmental monitoring (including screening for developmental problems *when indicated*), psychosocial assessment, parent-child observation, and assessments of child behavior
- *Education* – anticipatory guidance addressing the parent-infant relationship, child behavior, and various developmental challenges (e.g., promoting healthy sleep habits, discipline practices), and parenting education in different formats
- *Intervention* – various types of problem-focused counseling in the office setting, such as a telephone service or through home visitation
- *Care coordination* – the management of service needs, e.g., referrals for diagnostic assessments or other specialists for care

Figure 1: Service Organization for Early Child Development and Parenting

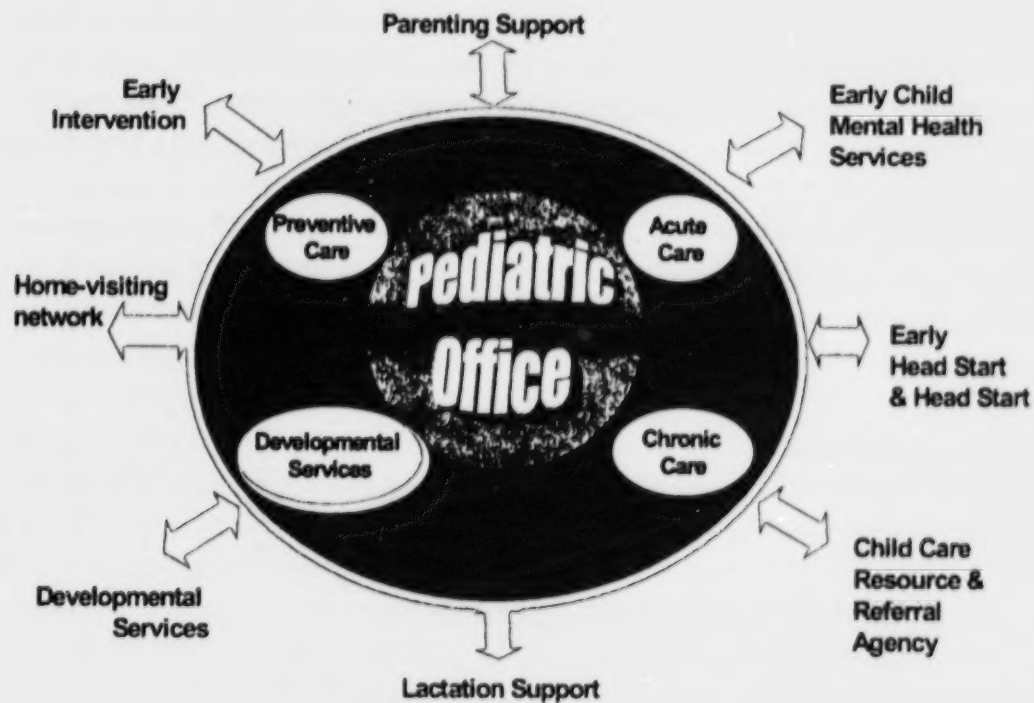


Figure 2: Care Model for Child Health



Source: Wagner, E. for NICHQ, 2001

Table 3: NICHQ - Developmental Services "Change Concepts"

- Seek patient/family input
- Agree on guidelines
- Stratify care (by risk) - Use structured assessment tools
- Use prompting systems for staff and patients
- Distribute work and train staff for new roles
- Simplify referral process
- Optimize billing
- Link with community resources

Table 4: NICHQ Office Processes and Tools to Support Them

<u>Process</u>	<u>Tools</u>
identifying service needs	PEDS survey
prompting provider	structured record
educating patients	patient activation
documenting services	flow sheet
following up	tracking system
monitoring effectiveness	periodic chart reviews

Figure 3: Community-Wide System and Process for Developmental Services

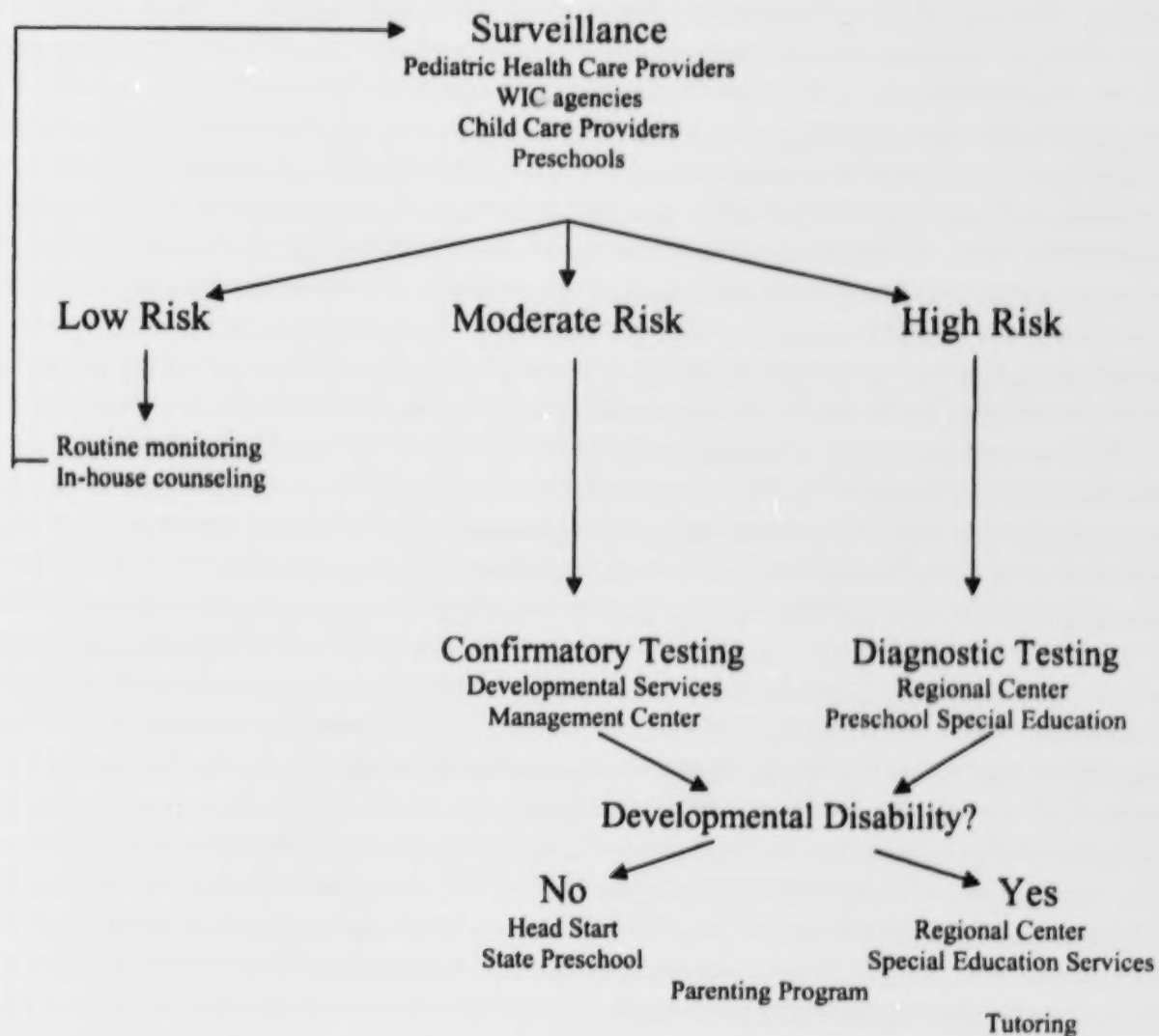
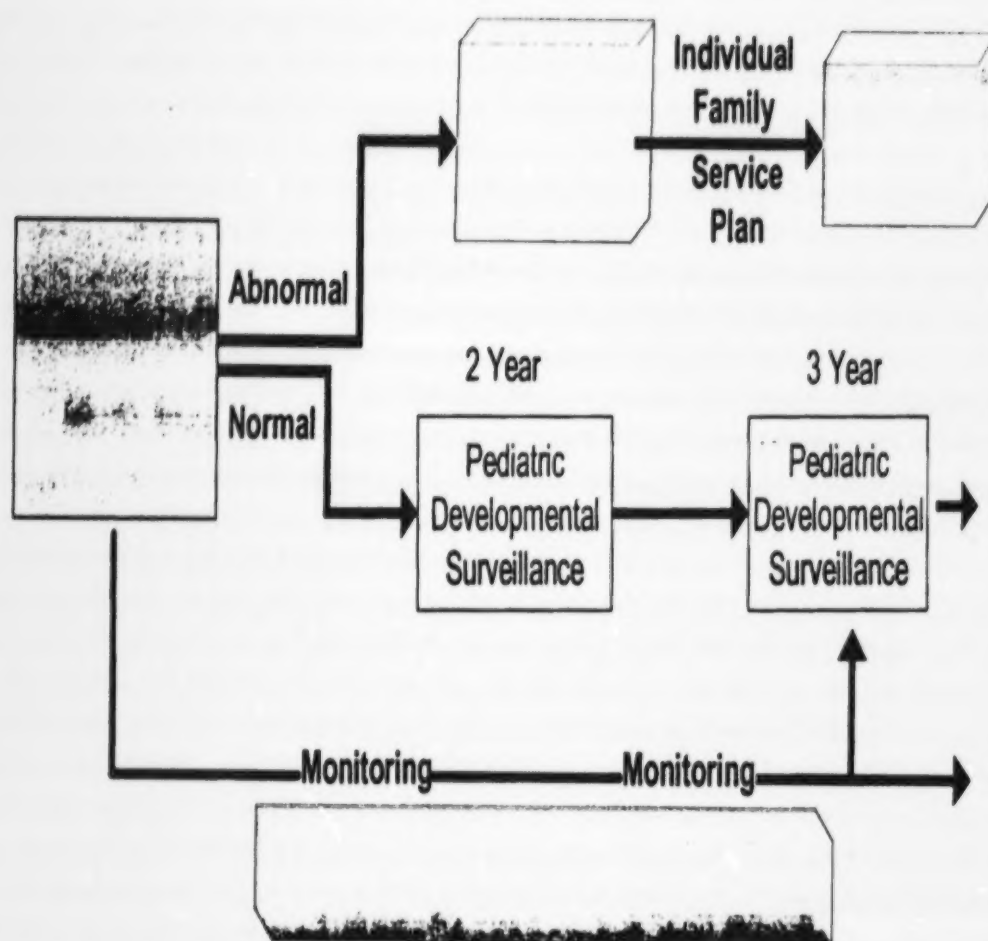


Figure 4: Denver Model

Improving Developmental Services

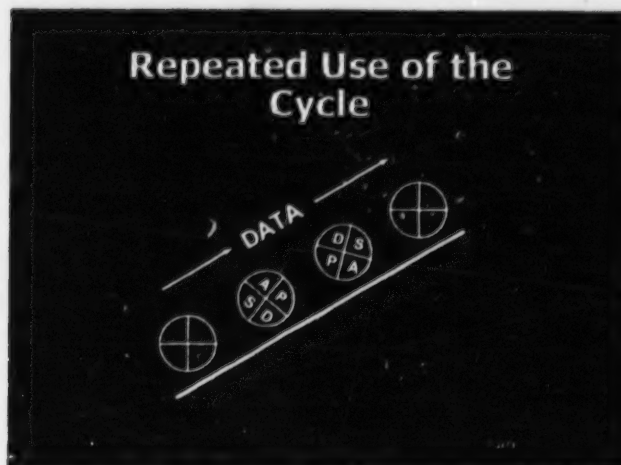
Denver Health General Pediatrics Model

Multi Step Surveillance, Assessment and Referral Model



UCLA Institute for Children, Families and Communities

Figure 5: Repeated Use of the Cycle



XIV: Appendix B: Examples of Best Practice Models

Denver System

The Denver General Hospital and Clinics system for assessing development and referring children with developmental disabilities for treatment is a three-tiered system in which primary care pediatric clinics are linked to a second tier and more centralized developmental assessment and coordination center that is then linked into the Individuals with Disabilities Education Act (IDEA) system for treatment of children with developmental disabilities (see Figure 4 in Appendix A). In the Denver model, children are routinely screened using the PEDS Developmental Surveillance Instrument at nine and eighteen months. Children that are found to have a significant concern are referred to the centralized, coordinated assessment team that then conducts additional assessments and triages children to appropriate diagnostic and treatment providers in other community locations. This unit also coordinates care and serves as the entry point to the IDEA system. Funding for the initial screens comes from the Medicaid-related health service delivery dollars. Funding for the assessment and coordination into the IDEA system comes from IDEA funds and Title V funds, in addition to Medicaid funds.

The innovations in this model are at both the front end in the type of developmental surveillance that is being conducted for all children and in the multi-tier process that allows for developmental assessments to be conducted on those children who have been identified through a targeting process to be most at risk. Innovation also occurs through a pathway that links the primary care, developmental screening, and developmental treatment system in a way that facilitates movement of children and families to the right level of care based on need.

**National Initiative for Children's Healthcare Quality (NICHQ)
Breakthrough Series Reengineering Model**

The NICHQ process uses a series of change concepts and tools, and although is more lenient on the inputs and less prescriptive, it is tighter on the focus of outcomes. The NICHQ process is based on an initiative which is focused on the improvement in quality of health care services for children. The goal is to help develop an effective system of care delivery by (1) identifying problems within the current system, and (2) using a collaborative process to develop solutions to these systemic problems. This process is called the "Breakthrough Series," where developmental change concepts, ideas or themes about how to improve developmental care are discussed and then utilized, in tandem with certain tools (for example, assessment tools) to make change. (See Tables 3 and 4 in Appendix A)

The NICHQ process also gives a model for improvement of health care systems which identifies goals to be accomplished, changes to be made to reach the goals, and evaluation to see if the goal made any improvement. This is implemented via a four step method (PDSA), which includes a plan, doing the plan, studying what has been done, and acting upon the data received in the analysis of the plan. This cycle of ideas/hunches/theories for change, the PDSA process, is repeated until changes that result in improvement occur (see Figure 5 in Appendix A). Evidence from the current literature shows how this model can be seen as an effective model.

Healthy Steps: Practice-Based Model

In December 1994, The Commonwealth Fund launched the Healthy Steps for Young Children Program. With a panel of experts and multidisciplinary teams, the program formed partnerships with nearly 70 funders and 24 pediatric and family practice sites across the country to provide enhanced well-child care, home visits, a child development telephone information line, child development and family health check-ups, written informational materials for parents that emphasize prevention, parent groups, and linkages to community resources. A significant part of the program's objectives are accomplished by providing a training curriculum to enhance the knowledge and skills of pediatric clinicians enrolled in the Healthy Steps program. Early findings suggest that the Healthy Steps model provides enhanced delivery of care with regard to behavioral and developmental services and that the model provides an approach for better meeting the needs of parents.¹

Information and services provided include:

- *A team approach to care, including pediatric clinicians and Healthy Steps specialists.*
- *Enhanced well-child visits by team and sequence of home visits by Healthy Steps specialists*
- *Written informational materials for parents that emphasize health promotion and healthy development*
- *Periodic child development screening and family health assessment*
- *More developmental services – receipt of 4+ Healthy Steps services (2-4 months)*
- *More home visits (2-4 months)*

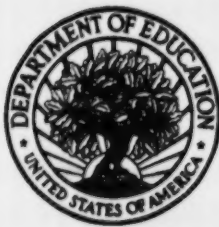
For more information, see: www.healthysteps.org

¹ Guyer B, Hughart N, Strobino D, Jones A, Scharfstein D, and the Healthy Steps Evaluation Team. (2000). Assessing the impact of pediatric-based developmental services on infants, families, and clinicians: challenges to evaluating the Healthy Steps Program. *Pediatrics*, 105 (3): 1-10.
<http://www.pediatrics.org/cgi/content/full/105/3/e33>.

ChildServ, Connecticut
A Model for Citywide Coordination and Enhanced Connectivity

The ChildServ program was developed in Hartford, Connecticut, in response to the evident need for a coordinated, citywide system of developmental surveillance which would serve the large number of Hartford children with developmental and behavioral concerns. ChildServ has been collecting data on an ongoing basis to evaluate their program's effectiveness. The program has demonstrated significant improvements in addressing the developmental and behavioral needs of Hartford's children and families. The program emphasizes, moreover, that its success is largely due to the collaborative relationships formed among the program's providers and community agencies. Major components of the program include:

- *training of local child health care providers in effective developmental surveillance and monitoring;*
- *a computerized inventory of regional services which address the developmental and behavioral needs of children and families;*
- *a triage, referral, and case management system that facilitates access of children and families to services;*
- *systematic data gathering on the developmental status and needs of local (needs assessment);*
- *and educational programs for parent groups and child care providers which provide information about early detection of developmental concerns and promote increased communication with child health care providers*



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